



CASE DEFINITION

Carbon Monoxide

Clinical description

The predominant manifestations of carbon monoxide poisoning are cardiovascular and neurologic effects. Inhalation of carbon monoxide gas typically leads to headache, dizziness, and confusion, which might progress to dyspnea, tachypnea, syncope, and metabolic acidosis (1-3).

Laboratory criteria for diagnosis

- *Biologic:* A case in which carboxyhemoglobin concentration exists >5% in venous or arterial blood in nonsmokers and >10% in smokers, as determined by hospital or commercial laboratory tests. The typical range of carboxyhemoglobin concentrations in smokers is 6%-10% (32).
- *Environmental:* No confirmatory test is available for carbon monoxide in environmental samples.

Case classification

- *Suspected:* A case in which a potentially exposed person is being evaluated by health-care workers or public health officials for poisoning by a particular chemical agent, but no specific credible threat exists.
- *Probable:* A clinically compatible case in which a high index of suspicion (credible threat or patient history regarding location and time) exists for carbon monoxide exposure, or an epidemiologic link exists between this case and a laboratory-confirmed case.
- *Confirmed:* A clinically compatible case in which laboratory tests on biologic samples have confirmed exposure.

The case can be confirmed if laboratory testing was not performed because either a predominant amount of clinical and nonspecific laboratory evidence of a particular chemical was present or a 100% certainty of the etiology of the agent is known.

Additional resources

1. Balzan MV, Agius G, Galea DA. Carbon monoxide poisoning: easy to treat but difficult to recognize. *Postgrad Med J* 1996; 72: 470-3.
2. Ernst A, Zibrak JD. Carbon monoxide poisoning. *N Engl J Med* 1998; 339: 1603-8.
3. Tomaszewski C. Carbon monoxide. In: Goldfrank LR, Flomenbaum NE, Lewin NA, Howland MA, Hoffman RS, Nelson LS, eds. *Goldfrank's toxicologic emergencies*. 7th ed. New York, NY: McGraw-Hill; 2002: 1478-92.

This document is based on CDC's best current information. It may be updated as new information becomes available. For more information, visit www.bt.cdc.gov/chemical, or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).

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